

FIRE SAFETY SCIENCE— PROCEEDINGS OF THE FOURTH INTERNATIONAL SYMPOSIUM

Editor

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**INTERNATIONAL ASSOCIATION
FOR FIRE SAFETY SCIENCE**

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Preface

The Fourth International Symposium on Fire Safety Science was held at the Ottawa Congress Centre, Ottawa, Ontario Canada, from 13–17 July 1994. There were 315 registrants attending three parallel sessions in which 109 papers were presented. Twenty countries were presented: Australia, Austria, Belgium, Canada, Finland, France, Germany, India, Indonesia, Israel, Italy, Japan, New Zealand, Norway, the Peoples Republic of China, Russia, Saudi Arabia, Spain, Sweden, Switzerland, the United Kingdom and the United States of America.

Opening remarks were given by Mr. J. K. Richardson, Arrangements Committee Chair. Welcoming addresses were given by Mr. J. Ploeg, Vice President-Engineering, National Research Council Canada, Mr. G. Seaden, Director-General, Institute for Research in Construction, National Research Council Canada, Deputy Chief Gary Clark, City of Ottawa Fire Department, and Mr. R. Morris, President, Fiprecan Inc.. Professor J. Quintiere, President, International Association for Fire Safety Science, presented the president's remarks. Following the opening ceremonies, Professor Ove Pettersson, Lund University, Sweden, delivered the Howard W. Emmons Plenary Lecture entitled "Rational Structural Fire Engineering Design, Based on Simulated Real Fire Exposure."

Papers were accepted on the basis of their quality and originality in the science of fire safety and its applications. 105 papers from the 172 papers submitted were accepted after peer review. In addition to these and the plenary lecture, six invited papers were also presented during the course of the symposium by Professor Fan Weicheng, Mr. J. R. Mawhinney, Professor H. Holemman, Ms. M. Law and Dr. P. Beaver, Mr. R. G. Hill, and Professor R. W. Bilger.

At the Award Reception and Banquet, Professor Ove Pettersson was presented, by Professor Emmons, the H. W. Emmons Invited Lectureship Award. The plaque recording the names of all Award recipients was passed on to the National Research Council Canada to retain until the next symposium.

Professor Emmons presented the Philip Thomas Medal of Excellence for the best paper from the Third Symposium. That paper by A. Atreya and M. Abu-Zaid was entitled "Effect of Environmental Variables on Piloted Ignition." The award was received by Professor Atreya. Two new awards were presented. The Kawagoe Award is for a lifelong career achievement in and contributions to fire safety. Dr. Y. Hasemi, on behalf of Professor K. Kawagoe, presented this award to Dr. A. Robertson (received by Dr. J. Rockett on behalf of Dr. Robertson). The FORUM Award recognizes an outstanding contribution to the science of fire safety or an advance in the state of the art in fire safety engineering practice of extraordinary international significance. This award was shared among five universities. Dr. J. Snell presented this award to each rep-

representative of Lund University, the Science University of Tokyo, the University of Edinburgh, the University of Maryland and Worcester Polytechnic Institute.

These proceedings are in the order of the three track sessions at the symposium with invited papers collected together in an opening section. Two accepted papers were withdrawn; one paper was accepted but was not delivered to the symposium. These are not included here. Sixteen posters were displayed in the foyer of the Congress Centre. The titles and authors of posters are listed towards the end of this volume.

The Association would like to record its gratitude to all the committees appointed to organize the various aspects of this successful symposium. It would particularly like to thank Mr. J. K. Richardson, Chair of the Arrangements Committee and his team for their efficient organization of an enjoyable and technically valuable symposium, Mr. D. P. Lund and his assistants for various administrative matters particularly on registration of attendees, and Dr. P. H. Thomas, Dr. M. A. Delichatsios, Dr. J. Hall, Professor T. Hirano, Ms. M. Law, Professor S. E. Magnusson, Professor O. Pettersson, and Professor T. Terai who coordinated the reviews of manuscripts. The Chair of the Publication committee also wishes to thank Dr. J. Rockett, M. K. Kashiwagi and Ms. N. Jason for their support.

The Association acknowledges the support of the following organizations which, by their generous contributions, helped ensure the success of the symposium.

Canadian Wood Council
National Research Council of Canada
BRANDFORSK, Sweden
Canadian Association of Fire Chiefs
Canadian Steel Construction Council
Factory Mutual Research Corporation, U.S.A.
Fire Research Station, U.K.
ITSEMAP FUEGO, Spain
Labour Canada
National Fire Protection Association, U.S.A.
National Institute of Standards and Technology, U.S.A.
SINTEF, Norway
Underwriters Laboratories, U.S.A.
Underwriters' Laboratories of Canada

Takashi Kashiwagi
Chair, Publications Committee

Gaithersburg, USA
June 1994

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International Association for Fire Safety Science

The Association was established at its first Symposium in 1985. The principal objectives at the Association are the encouragement of research into the science of unwanted fire and the organization of international symposia to present such research. Membership is open to all having these interests. In 1988, it became a registered charity in England and Wales.

The Association is governed by the Committee and its officers. At the 4th International Symposium on Fire Safety Science held in Ottawa, the following Committee and its officers were elected.

Prof. J. G. Quintiere (USA), Chair
Dr. D. D. Drysdale (UK), Vice-chair
Dr. R. Friedman (USA), Vice-chair
Prof. T. Hirano (Japan), Vice-chair
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Prof. S. E. Magnusson (Sweden)	Dr. D. Young (Canada)

The Association would like to express its appreciation to retiring Committee members for their many contributions:

Prof. R. W. Fitzgerald (USA)	Prof. O. Pettersson (Sweden)
Prof. S. Horiuchi (Japan)	Mr. J. K. Richardson (Canada)
Prof. K. Kawagoe (Japan)	Mr. J. Unoki (Japan)
Dr. M. Kersken-Bradley (Germany)	Prof. T. Wakamatsu (Japan)
Mr. K. S. Pedersen (Norway)	

The Association owes a debt of gratitude to Prof. K. Kawagoe and Prof. O. Pettersson, who were prime movers in founding and shaping the IAFSS. Their contributions and dedication to fire science have been considerable, and we will miss them from the Committee. We also will miss Mr. J. K. Richardson for his talent displayed in hosting the 4th Symposium.

Over the last three years the Association has taken steps to secure its operations and extend its activities. An IAFSS Administrative Office was established in conjunction with the Society of Fire Protection Engineers in Boston. Through that arrangement, we were able to produce a Register listing members and their addresses, a Prospectus describing the Association, and regular Newsletters edited by Dr. R. Friedman. The Association has negotiated an agreement with the Fire Safety Journal to make it the "Official Journal of the IAFSS." Negotiations are underway to establish reduced subscription rates to IAFSS Membership.

A gift of 10,000 pounds was awarded to the Fire Safety Engineering Unit of the University of Edinburgh. A \$500 prize for the best papers at the First Asian Conference on Fire Science and Technology (Hefei, China) was presented. Two new awards were established by the Association: the FORUM Prize for a distinctive contribution to fire science, and the Kawagoe Medal for long term contributions to fire science.

The Association is fostering and cooperating with regional activities in fire science and education in Asia and in Europe, and is seeking to further these aims. Interest in the Association is encouraged by all individuals.

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